Greenhouse Effects

In the 19th century, scientists realized that gases in the atmosphere cause a "greenhouse effect" which affects the planet's temperature. These scientists were interested mostly in the option that a lower level of carbon dioxide gas might explain the ice ages of the distant past. At the turn of the century, Svante Arrhenius calculated that releases from human industry might someday bring a global warming. Other scientists dismissed his idea as faulty. In 1938, G.S. Callendar argued that the level of carbon dioxide was climbing and raising global temperature, but most scientists found his arguments fantastic. It was almost by chance that a few researchers in the 1950s discovered that global warming truly was possible. In the early 1960s, C.D. Keeling measured the level of carbon dioxide in the atmosphere: it was rising fast. Researchers began to take an interest, struggling to understand how the level of carbon dioxide had changed in the past, and how the level was influenced by chemical and biological forces. They found that the gas plays an essential role in climate change, so that the rising level could seriously affect our future. The greenhouse effect mentions to conditions where the short wavelengths of [visible](http://hyperphysics.phy-astr.gsu.edu/hbase/ems3.html#c2) light from the sun pass through a [transparent](http://hyperphysics.phy-astr.gsu.edu/hbase/mod4.html#c2) medium and are absorbed, but the longer wavelengths of the [infrared](http://hyperphysics.phy-astr.gsu.edu/hbase/ems3.html#c1) re-radiation from the [heated objects](http://hyperphysics.phy-astr.gsu.edu/hbase/bbrc.html#c4) are unable to pass through that medium. The trapping of the long wavelength radiation leads to more heating and a higher secondary temperature. Besides the heating of an automobile by sunlight through the windshield and the namesake example of heating the greenhouse by sunlight passing through sealed, transparent windows, the greenhouse effect has been widely used to describe the trapping of excess heat by the rising attention of [carbon dioxide](http://hyperphysics.phy-astr.gsu.edu/hbase/thermo/grnhse.html#c3) in the atmosphere. The carbon dioxide strongly absorbs infrared and does not allow as much of it to escape into space.

Sources of reference:

<http://hyperphysics.phy-astr.gsu.edu/hbase/thermo/grnhse.html>

<http://www.aip.org/history/climate/co2.htm>